



Laboratory Equipment Manufacturer
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Portable Bio-suction System 34liter

BSU-34 Series

Service Manual



PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

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A. Important Notice

- Please study this instruction manual carefully before using this product.
- Please discard packing material according to related regulations.
- Please make sure the supply voltage and frequency conform to power specified on main unit.
- Please operate the instrument in well ventilated areas and keep away from inflammables.
- Filtration accessories (include spill-proof buoy) are applicable to most of low concentrated acid, base, organic solution but not all solution.
- This pump is not corrosion-proof. Please do not pump acid, base or organic vapors or gases directly.
- Please clean and maintain the instrument and accessories according to the maintenance method after every use.
- For more product details, please refer our latest catalog and company website.

B. Unpacking

Carefully check if the shipping carton is damaged before unpacking. Please check the items according to standard package list. If you have any questions, please preserve serial no., shipping carton and contact your dealer for quick solution.

Model	BSU-34	BSU-34 - LF 30	BSU-34 - LF 32	BSU-34 – SUC-KIT
Standard Package Includes:	BSU-34 suction unit x1	BSU-34 suction unit x1	BSU-34 suction unit x1	BSU-34 suction unit x1
	Power cord x1	LF 30 Filtration Set x1	LF 32 Filtration Set x1	1200 ml PES suction bottle x1
	Instruction Manual x1	Silicone tube x1	Silicone tube x1	SUC-KIT suction kit x1
		Power cord x1	Power cord x1	PTFE Disc filter x1
		Instruction Manual x1	Instruction Manual x1	Power cord x1
				Instruction Manual x1

C. Combined Filtration System Diagram



<pic 1> (a) BSU-34



(b) BSU-34 - LF 30

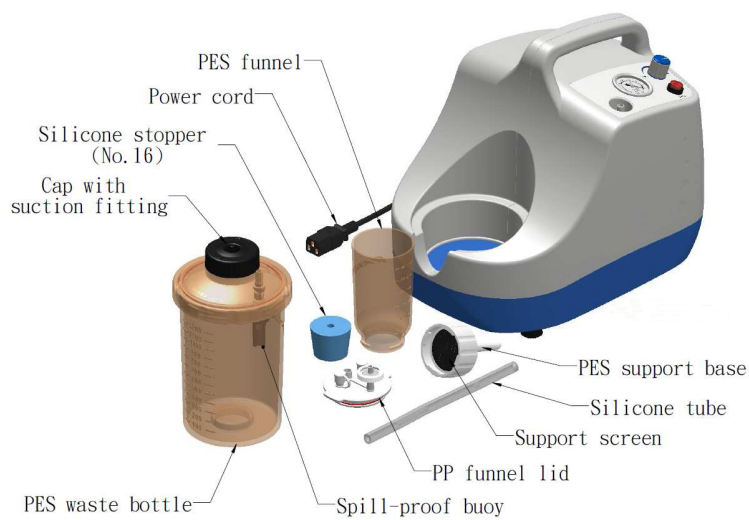


(c) BSU-34 - LF 32



(d) BSU-34 – SUC-KIT

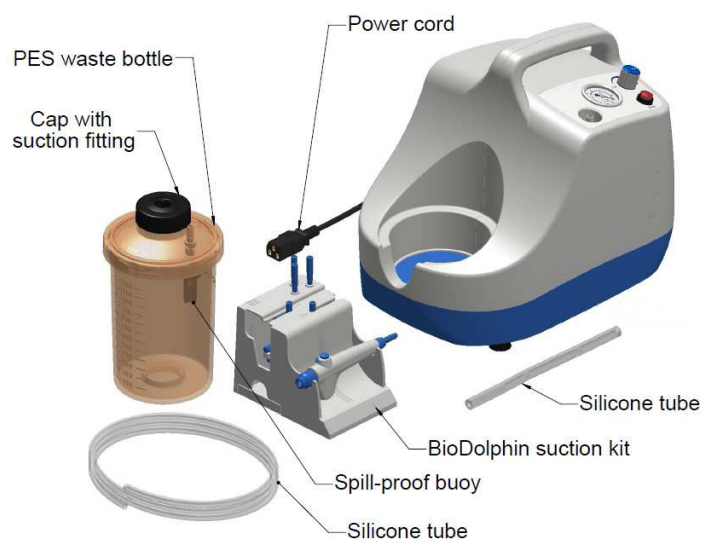
D. Disassembly Diagram



<pic 2> BSU-34 - LF 30



<pic 3> BSU-34 - LF 32



<pic 4> BSU-34 - SUC-KIT

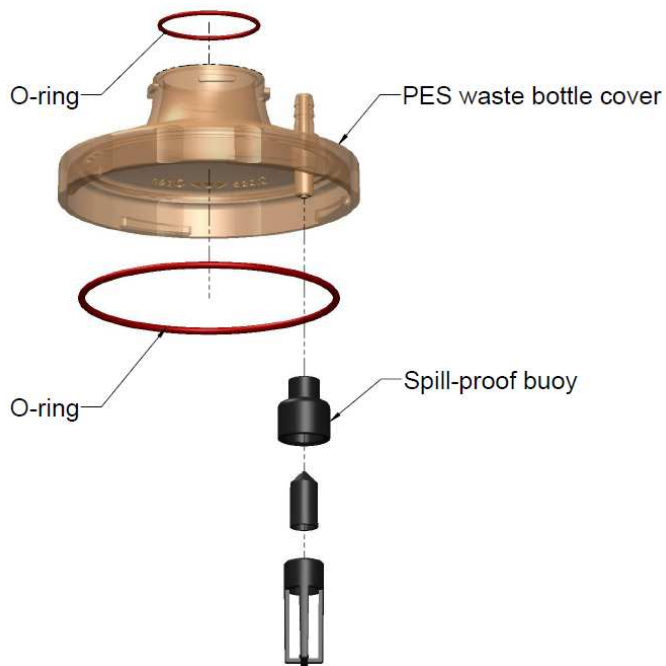


<pic 5> BSU-34 operation panel

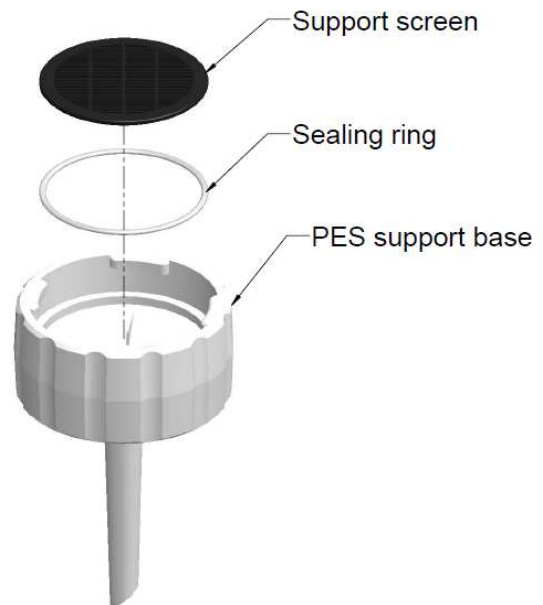


<pic 6> BSU-34 Main Part Diagram

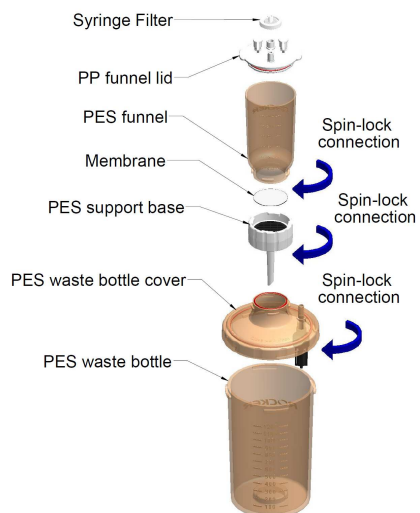
E. Assembly Diagram



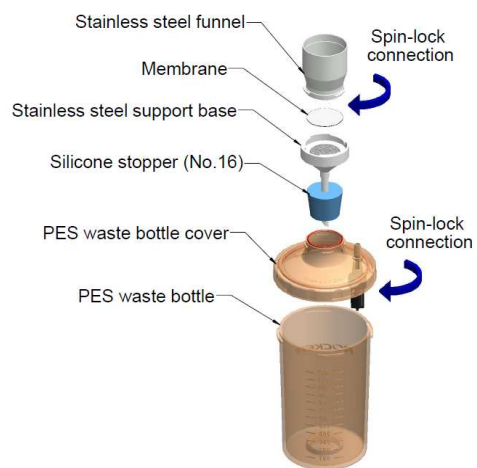
<pic 7> Spill-proof assembly diagram



<pic 8> Support base assembly diagram



<pic 9> LF 30 Assembly



<pic 10> LF 32 Assembly



<pic 11> PES waste bottle

F. Operating Procedure

1. BSU-34 - LF 30 <pic 1-b>

- a. Ensure that the spill-proof buoy is installed properly. Please refer to <pic 7> when installing it.
Note: please always put the buoy into the waste bottle cover gently to avoid the deformation of its plastic tube that could cause a malfunction.
- b. Assemble LF 30 as per <pic 9>.
- c. Plug the power cord into a proper power supply then press power switch as shown in <pic 5> to power on the machine. After blocking the outlet with a hand, adjust vacuum level to a desired value by turning the vacuum regulator then power off the machine when the adjustment is finished.
- d. Place the complete set of LF 30 filtration system into BSU-34's reserved space then connect the inlet of waste bottle cover to the outlet of the machine with a silicone tube supplied with the package.
- e. Remove the cap with suction fitting and then screw the support base onto the waste bottle cover clockwise; place the filter membrane on the middle part then screw the funnel into the support base clockwise.
Note: in case the support screen or O-ring gasket is not installed properly, please put them back into the support base with downward force by referring to <pic 8>.
- f. Pour liquid sample into funnel and then turn on the machine by pressing power switch to begin the filtration process. Turn off the machine by pressing power switch again when the filtration process is finished.
- g. Wait till the vacuum pointer indicates "0" (Turning vacuum control knob can speed it up) and then remove the funnel from the support base counterclockwise.
- h. Remove the filter from the support screen and process it further according to the applicable procedure.
- i. Dispose of the contents in the waste bottle according to the applicable procedure or regulation.
- j. Proceed with cleaning and maintenance after every use according to <G. Maintenance>.
Note: Check the liquid level of the waste bottle before each use and then empty it as per local regulations after removing the cover counterclockwise if needed.

2. BSU-34 - LF 32 <pic 1-c>

- a. Ensure that the spill-proof buoy is installed properly. Please refer to <pic 7> when installing it.
Note: please always put the buoy into the waste bottle cover gently to avoid the deformation of its plastic tube that could cause a malfunction.
- b. Assemble LF 32 as per <pic 10>.
- c. Fasten the cover on the waste bottle clockwise <pic 10>.
- d. Plug the power cord into a proper power supply then press power switch as shown in <pic 5> to turn on the machine. After blocking the outlet with a hand, adjust vacuum level to a desired value by turning the vacuum regulator then turn off the machine when the adjustment is finished.

- e. Place the complete set of LF 32 filtration system into BSU-34's reserved space then connect the inlet of waste bottle cover to the outlet of the machine with a silicone tube supplied with the package.
- f. Plug the support base of S.S. filter holder into the silicone stopper (No. 16) more than 5 cm deep to keep well-sealed; put S.S. support screen, filter membrane on the support base in sequence and then screw S.S. funnel into support base clockwise.
- g. Remove the cap with suction fitting from the waste bottle then plug the filter holder into the waste bottle tightly.
- h. Pour liquid sample into funnel and then turn on the machine by pressing power switch to begin the filtration process. Turn off the machine by pressing power switch again when the filtration process is finished.
- i. Wait till the vacuum pointer indicates "0" (Turning vacuum control knob can speed it up) and then remove the funnel from the support base counterclockwise.
- j. Remove the filter from the support screen and process it further according to the applicable procedure.
- k. Dispose of the contents in the waste bottle according to the applicable procedure or regulation.
- l. Proceed with cleaning and maintenance after every use according to <G. Maintenance>.

Note: Check the liquid level of the waste bottle before each use and then empty it as per local regulations after removing the cover counterclockwise if needed.

3. BSU-34 – SUC-KIT <pic 1-d>

- a. Ensure that the spill-proof buoy is installed properly. Please refer to <pic 7> when installing it.
Note: please always put the buoy into the waste bottle cover gently to avoid the deformation of its plastic tube that could cause a malfunction.
- b. Assemble the waste bottle <pic 11>.
- c. Plug the power cord into a proper power supply then press power switch as shown in <pic 5> to turn on the machine. After blocking the outlet with a hand, adjust vacuum level to a desired value by turning the vacuum regulator then turn off the machine when the adjustment is finished.
- d. Place the waste bottle into BSU-34's reserved space and connect the outlet (with spill-proof buoy) of the waste bottle to the inlet of the machine with a silicone tube; screw the cap with suction fitting into the waste bottle clockwise.
- e. Connect the handle of SUC-KIT to the inlet of the black cap with a silicone tube and then turn on the power switch of the machine.
- f. Select a desired fitting part to be connected with the handle for waste suction.
- g. After the process is finished then turn off the machine. Dispose of the contents in the waste bottle in accordance with the applicable regulations.
- h. Proceed with cleaning and maintenance after every use according to <G. Maintenance>.

Note: Check the liquid level of the waste bottle before each use and then empty it as per the applicable regulations after removing the cover counterclockwise if needed.

4. BSU-34 with other filtration apparatus

Before using BSU-34 with any other filtration apparatus, please ensure that the size of the apparatus can be accommodated in the reserved space.



G. Maintenance

1. Funnel lid, funnel, support base, waste bottle cover, cap, spill-proof buoy and waste bottle are made of high temperature resistant material. Please rinse them with water and wipe with a dry cloth after every use. Autoclave is available.
2. S.S. funnel and S.S. support base are made of SUS 316 material. Please rinse them with water and wipe with a dry cloth after every use. Autoclave is available.
3. Silicone tube and sealing ring can resistant high temperature. Please rinse them with water and wipe with a dry cloth after every use. Autoclave is available.
4. For autoclave, you are suggested to set up at 121 °C for 30 minutes at least.
5. BSU-34 built-in an oil free pump, no maintenance is necessary. Please turn off the switch and wipe the platform with a dry cloth after every use.
6. Please maintain the accessories of suction kit by following our instruction manual.
7. Muffler, disc filter and silicone tube are consumables. Please replace these parts at least every half year to make sure the flow rate is not affected.
8. When the fuse need to be replaced, you can get the backup fuse (110V: use 2.5A; 220V: use 1.5A) from the fuse box

H. Troubleshooting

Symptoms	Possible causes and Solution
Device fails to start	1. Check the power supply conform to power specified on main unit 2. Blown fuse→ replace fuse if it is burnt out 3. Check if the power switch is in the ON position 4. Vacuum still exists in system→ release vacuum and restart 5. Defective switch→ contact your distributor for repair
Vacuum fails to adjust	1. Faulty gauge→ contact your distributor for repair 2. Loose regulator→ tighten the regulator by yourself or contact your distributor for repair 3. Faulty regulator → contact your distributor for repair
Reduced /low vacuum	1. Regulator improperly set→ set regulator vacuum level following instruction manual 2. Clogged muffler→ check if the muffler is clogged 3. Air leak→ Check the tubing and connected accessories for possible leaks. (Attach, tighten or replace)
Low filtration speed	1. Regulator improperly set→ set regulator vacuum level following instruction manual 2. Air leak→ Check the tubing and connected accessories for possible leaks. (Attach, tighten or replace) 3. Check if the suction bottle is overflowing 4. Check if the specification of membrane filter is correct

I. Ordering Information

- 197400-11/22 BSU-34, Vacuum filtration unit, AC110V/AC220V
- 197401-11/22 BSU-34 - LF 30, Vacuum filtration system, AC110V / AC220V
- 197402-11/22 BSU-34 - LF 32, Vacuum filtration system , AC110V / AC220V
- 197403-11/22 BSU-34 – SUC-KIT, Vacuum filtration system , AC110V / AC220V
- 199100-00 SUC-KIT -LB, Suction kit, light blue
- 199110-00 SUC-KIT -DB, Suction kit, deep blue
- 199120-00 SUC-KIT -P, Suction kit, pink
- 199130-00 SUC-KIT-G, Suction kit, green
- 197010-30 LF 30, 300ml PES filtration set
- 197010-50 LF 50, 500 ml PES filtration set
- 197010-32 LF 32, 100 ml Stainless steel filtration set
- 197010-33 LF 33, 300 ml Stainless steel filtration set
- 197000-01 LF 3, 300 ml PES filter holder (include funnel lid)
- 167103-10 100 ml Stainless steel filter holder
- 167103-30 300 ml Stainless steel filter holder
- 197000-36 PP funnel lid
- 197000-35 PES support base, 47mm
- 197000-11 PES waste bottle (1200 ml)
- 197000-39 Spill-proof buoy
- 197400-45 PE Muffler (1/8 PT , port size:20 μ m , length:26 mm)
- 167200-35 PTFE disc filter